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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,684	06/09/2000	Joseph M. Cannon	CANNON 103-92-50	2761

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 08/28/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,684

Applicant(s)

CANNON ET AL.

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 6, 19 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 6, 19, and 25 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Limiting the claim by using received signal strength indication does not limit the claims further because received signal strength takes into account distance as well as other factors. Therefore, signal RSSI is a broader limitation than that of distance of a handset from a base.

Claims 18 and 24 are objected to because of the following informalities: the claims refer to simultaneous operation of said handset and said cordless telephone, but in claim 10 the handset is in simultaneous operation with the base of the cordless telephone. The examiner assumes that claims 18 and 24 are written correctly, but advises careful consideration of the claim language.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10-19, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US Patent 5,572,575) in view of Kato et al. (US Patent 3,952,166).

Claim 1 is limited in part to a **cordless telephone**; Yamamoto discloses a cordless telephone system comprising a base station, a handset unit, and a speaker phone circuit provided in the base station (column 1, lines 11-27). Therefore, it can be seen that Yamamoto discloses all limitations of the claim with the exception of **an audio path attenuation controller comprising: a proximity determinator to determine a distance between a handset of said cordless telephone and a base unit of said cordless telephone**; Kato teaches to improve a loud speaking telephone by determining the distance between the microphone (i.e. handset) and loudspeaker (i.e. base) (column 3, lines 2-13) for the purpose of preventing howling (column 2, lines 50-56). **And to effectuate a given attenuation of an audio path based on said determined distance**; Kato teaches that a voice switch, which monitors the distance of a microphone from a loudspeaker, controls the loss (i.e. attenuation) of a round signal (i.e. audio path) (column 3, lines 2-13). It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the distance between a microphone and a loudspeaker and control the loss in a round signal based on that distance for the purpose of preventing howling in the telephone.

Claim 2 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein: said cordless telephone has a speakerphone functionality**; Yamamoto discloses a

cordless telephone system having a speaker phone function (column 1, lines 11-27).

Said effected attenuation reducing instability in audible feedback between said handset and said base unit; Kato discloses that if the gain of an acoustic loop, comprising a received signal of a loudspeaker and a received signal of a microphone, exceeds unity howling occurs, but inserting a loss so that the gain is below 0dB prevents howling (column 1, lines 22-49). Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 3 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, wherein: **said given attenuation is a fixed amount of attenuation based on said determined distance being less than or equal to a given threshold proximity distance between said handset and said base unit;** Kato discloses a worst case attenuation based on the closest position (i.e. predetermined closest distance) a microphone and speaker can be before attenuation makes it impossible to communicate. Attenuation can never be greater than this worst case amount (column 2, lines 12-19 and lines 43-49). Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 4 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, wherein: **said given attenuation is a variable amount of attenuation based on a relationship between a desired amount of attenuation and said determined distance;** Kato discloses that the amount of loss (i.e. attenuation) automatically decreases (i.e. variable) to a minimum amount to prevent howling (i.e. desired amount of attenuation) in

accordance with the condition of using the telephone set, such as in the distance of the microphone from the speaker (column 2, lines 50-56 and column 3, lines 2-13).

Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 5 is limited to **the audio path attenuation controller for a cordless telephone according to claim 4**, as covered by Yamamoto in view of Kato, **wherein: said desired amount of attenuation is determined from a look up table**; examiner takes Official Notice of the fact that look up tables are well known to those of ordinary skill in the art to be used to reduce computational complexity. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the results of the comparators in Kato to index a lookup table that stored the correct variable loss results for the purpose of easing the computational complexity (MPEP 2144.03).

Claim 6 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein said proximity determinator further comprises: a receive signal strength indicator module**; Kato discloses that the received signal output on the speaker and the round signal picked up by the microphone (i.e. acoustically coupled signal) are compared in value (i.e. signal strength) to determine the distance between the microphone and the loudspeaker (column 3, lines 2-13). Therefore, Yamamoto in view of Kato discloses all limitations of the claim.

Claim 10 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein: said proximity determinator determines said distance only when said handset**

and said base unit are operating simultaneously; since both the handset and base of the cordless telephone must both be powered to operate it is inherent that proximity determination occurs only when both are operating simultaneously. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 11 is limited to **the audio path attenuation controller for a cordless telephone according to claim 10**, as covered by Yamamoto in view of Kato, **wherein at least one of said handset and said base unit is operating in a speakerphone mode when said distance is determined;** Kato discloses determining distance between a microphone and loudspeaker to limit their acoustic coupling, which inherently only occurs in a speakerphone mode. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 12 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein: said attenuation is a muting of said audio path;** Kato discloses a means for attenuating an audio path where attenuation is essentially the same as muting. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 13 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein: said attenuation is variable in relationship to a distance between said handset and said base unit;** this is essentially the same as claim 4, as covered by Yamamoto in view of Kato. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 14 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, **wherein: said attenuation is a fixed amount of attenuation**; this is essentially the same as claim 3, as covered by Yamamoto in view of Kato. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 15 is limited in part to **a cordless telephone**; Yamamoto discloses a cordless telephone system comprising a base station, a handset unit, and a speaker phone circuit provided in the base station (column 1, lines 11-27). Therefore, Yamamoto discloses all limitations of the claim with the exception of **a method of attenuating an audio path, comprising: determining a proximity of a handset of said cordless telephone to a base unit of said cordless telephone**; Kato teaches to improve a loud speaking telephone by determining the distance between the microphone (i.e. handset) and loudspeaker (i.e. base) (column 3, lines 2-13) for the purpose of preventing howling (column 2, lines 50-56). **When said handset is within a predetermined close distance to said base unit, attenuating at least one audio path between said handset and said base unit**; Kato discloses using the distance between a loudspeaker (i.e. base unit) and microphone (i.e. handset) to control the loss (i.e. attenuation) in an audio path such that the loss is adjusted to be less than a worst case loss that occurs when the devices are too close together (i.e. predetermined close distance) (column 3, lines 2-13). It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the distance between a microphone and

a loudspeaker and adjust the loss of an audio path in relation to a worst case value as taught by Kato for the purpose of preventing howling.

Claim 16 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 15**, as covered by Yamamoto in view of Kato, **further comprising: placing said cordless telephone in a speakerphone mode**; Kato discloses determining distance between a microphone and loudspeaker to limit their acoustic coupling, which inherently only occurs in a speakerphone mode. **Said attenuation reducing instability in audible feedback between said handset and said base unit**; Kato discloses that if the gain of an acoustic loop, comprising a received signal of a loudspeaker and a received signal of a microphone, exceeds unity howling occurs, but inserting a loss so that the gain is below 0dB prevents howling (column 1, lines 22-49). Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 17 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 16**, as covered by Yamamoto in view of Kato, **wherein: said at least one audio path is a path from a microphone of said handset**; Kato discloses a voice switch that controls the loss in a phone to prevent howling in an audio loop that includes a received signal path from a microphone (column 3, lines 2-13). Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 18 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 15**, as covered by Yamamoto in view of Kato, **further comprising: determining simultaneous operation of said handset and said**

cordless telephone. Kato discloses preventing howling in an audio loop that is formed between a loudspeaker (i.e. cordless telephone) and a microphone (i.e. handset); an audio loop would not exist unless both the microphone and loudspeaker were in operation simultaneously, such that when an audio loop is formed, simultaneous operation is inherently determined. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 19 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 15**, as covered by Yamamoto in view of Kato, wherein: **said proximity is determined using a receive signal strength indicator of a received signal**; Kato discloses that the received signal output on the speaker and the round signal picked up by the microphone (i.e. acoustically coupled signal) are compared in value (i.e. signal strength indication) to determine the distance between the microphone and the loudspeaker (column 3, lines 2-13). Therefore, Yamamoto in view of Kato discloses all limitations of the claim.

Claim 22 is limited to a **cordless telephone**; Yamamoto discloses a cordless telephone system comprising a base station, a handset unit, and a speakerphone circuit provided in the base station (column 1, lines 11-27). Therefore, Yamamoto discloses all limitations of the claim with the exception of **an apparatus for attenuating an audio path, comprising: means for determining a proximity of a handset of said cordless telephone to a base unit of said cordless telephone**; Kato teaches to improve a loud speaking telephone by determining the distance between the microphone (i.e. handset) and loudspeaker (i.e. base) (column 3, lines 2-13) for the

purpose of preventing howling (column 2, lines 50-56). **Means for attenuating at least one audio path between said handset and said base unit when said handset is within a predetermined close distance to said base unit;** Kato discloses using the distance between a loudspeaker (i.e. base unit) and microphone (i.e. handset) to control the loss (i.e. attenuation) in an audio path such that the loss is adjusted to be less than a worst case loss that occurs when the devices are too close together (i.e. predetermined close distance) (column 3, lines 2-13). **Said attenuation prevents instability in audible feedback between said handset and said base unit;** Kato discloses that if the gain of an acoustic loop, comprising a received signal of a loudspeaker and a received signal of a microphone, exceeds unity howling occurs, but inserting a loss so that the gain is below 0dB prevents howling (column 1, lines 22-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the distance between a microphone and a loudspeaker and adjust the loss of an audio path between the microphone and loudspeaker in relation to a worst case value so the gain of the loop is never greater than unity as taught by Kato for the purpose of preventing howling.

Claim 23 is limited to **the apparatus for attenuating an audio path of a cordless telephone according to claim 22**, as covered by Yamamoto in view of Kato, **wherein: said at least one audio path is a path from a microphone of said handset;** Kato discloses a voice switch that controls the loss in a phone to prevent howling in an audio loop that includes a received signal path from a microphone

(column 3, lines 2-13). Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 24 is limited to **the apparatus for attenuating an audio path of a cordless telephone according to claim 22**, as covered by Yamamoto in view of Kato, **further comprising: means for determining simultaneous operation of said handset and said cordless telephone**; Kato discloses preventing howling in an audio loop that is formed between a loudspeaker and a microphone; it is inherent that an audio loop would not exist unless both the microphone (i.e. handset) and loudspeaker (i.e. cordless telephone) were in operation simultaneously such that simultaneous operation is determined when received signals in an audio loop are detected. Therefore, Yamamoto in view of Kato makes obvious all limitations of the claim.

Claim 25 is limited to **the apparatus for attenuating an audio path of a cordless telephone according to claim 22**, as covered by Yamamoto in view of Kato, **wherein said means for determining comprises: a receive signal strength indicator module**; Kato discloses that the received signal output on the speaker and the round signal picked up by the microphone (i.e. acoustically coupled signal) are compared in value (i.e. signal strength indication) to determine the distance between the microphone and the loudspeaker (column 3, lines 2-13). Therefore, Yamamoto in view of Kato discloses all limitations of the claim.

Claims 7, 20, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Kato as applied to claims 1, 15, and 22 above, and further in view of Ravi et al. (US Patent 6,560,462).

Claim 7 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, wherein **said proximity determinator further comprises: a round trip delay measurement module**; Ravi teaches to use round trip timing to determine the distance of a mobile station (i.e. handset) from a base station (i.e. base) (column 6, lines 57-65) for the purpose not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA (column 2, lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use round trip delay measurement to determine the distance of a mobile station from a base station as taught by Ravi for the purpose of not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA.

Claim 20 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 15**, as covered by Yamamoto in view of Kato, wherein: **said proximity is determined using a round trip delay timing of a signal between said handset and said base unit**. Ravi teaches to use round trip timing to determine the distance of a mobile station (i.e. handset) from a base station (i.e. base) (column 6, lines 57-65) for the purpose not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA (column 2, lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use round trip delay measurement to determine the distance of a mobile station from a base station as taught by Ravi for the purpose of not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA.

Claim 26 is limited to **the apparatus for attenuating an audio path of a cordless telephone according to claim 22**, as covered by Yamamoto in view of Kato, wherein said means for determining comprises: a round trip delay measurement module. Ravi teaches to use round trip timing to determine the distance of a mobile station (i.e. handset) from a base station (i.e. base) (column 6, lines 57-65) for the purpose not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA (column 2, lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use round trip delay measurement to determine the distance of a mobile station from a base station as taught by Ravi for the purpose of not requiring costly antennae arrays needed for other time-based distance measurements such as TOA and TDOA.

Claims 8-9, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Kato as applied to claims 1, 15, and 22 above, and further in view of Ayoub et al. (US Patent 6,477,363).

Claim 8 is limited to **the audio path attenuation controller for a cordless telephone according to claim 1**, as covered by Yamamoto in view of Kato, wherein said proximity determinator further comprises: a global positioning satellite system; Ayoub teaches to use GPS installed in a cell phone (i.e. handset) to communicate its position to a station (i.e. base) (column 4, lines 2-35) for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network (column 1, lines 60-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use GPS built into the phone to locate it and

transmit its location to a station for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network.

Claim 9 is limited to **the audio path attenuation controller for a cordless telephone according to claim 8**, as covered by Yamamoto in view of Kato and in further view of Ayoub, **wherein: said global positioning satellite system is installed in said handset**. Ayoub discloses that the GPS is built in to the cell phone (i.e. handset). Therefore, Yamamoto in view of Kato and in further view of Ayoub makes obvious all limitations of the claim.

Claim 21 is limited to **the method of attenuating an audio path of a cordless telephone according to claim 15**, as covered by Yamamoto in view of Kato, **wherein: said proximity is determined using a difference between a GPS determined location of said handset and a GPS determined location of said base unit**. Ayoub teaches to use GPS installed in a cell phone (i.e. handset) to communicate its position to a station (i.e. base) (column 4, lines 2-35) for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network (column 1, lines 60-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use GPS built into the phone to locate it and transmit its location to a station for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network.

Claim 27 is limited to **the apparatus for attenuating an audio path of a cordless telephone according to claim 22**, as covered by Yamamoto in view of Kato, **wherein said means for determining comprises: a global positioning satellite**

system. Ayoub teaches to use GPS installed in a cell phone (i.e. handset) to communicate its position to a station (i.e. base) (column 4, lines 2-35) for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network (column 1, lines 60-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use GPS built into the phone to locate it and transmit its location to a station for the purpose of using a system that is easy to implement to locate a caller using an existing telephone network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

WFB
8/18/03



**MINSUN OH HARVEY
PRIMARY EXAMINER**